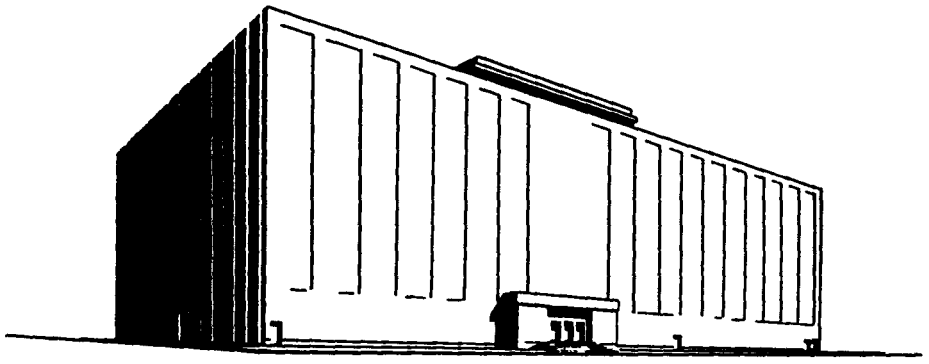

History of U. S. NAVAL RADIOLOGICAL DEFENSE LABORATORY

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or industry; Evaluation Reports, which evaluate products or materials; and Review and Lecture Reports, which are either literature searches or lectures given by Laboratory members at meetings.

Apart from these Laboratory publications are those technical reports written on the results of Laboratory participation in weapons tests conducted at Eniwetok or in Nevada by the Department of Defense - Atomic Energy Commission. Each field operation is composed of several projects, each of which is recorded in a report. There are three stages for every report:

(1) Pre-test Report describing the data sought.

(2) Interim Report (ITR), a preliminary report written at the test site, indicating the data received from the test.

(3) Draft of the final Weapon-Test Report (WT) which is written after the data have been analyzed and interpreted. The Weapons Test Reports are actually published by the Armed Forces Special Weapons Project.

Total reports issued by the Laboratory by types are:

U.S. Naval Radiological Defense Laboratory Reports	-----	121
Atomic Defense Reports (AD)	-----	338
Manuals (Drafts)	-----	7
Technical Reports (USNRDL-TR)	-----	287
Technical Memoranda (TM)	-----	98
Progress Reports (P)	-----	17
Instrument Evaluation Reports	-----	42
Evaluation Reports	-----	7
Review and Lecture (RandL)	-----	72
Weapon-Test Reports (WT)	-----	74

Following are descriptions of some of the larger technical publications. One of the early significant formal contributions by the Laboratory was the summary of the state of knowledge at that time prepared in 1949 for the 1950 edition of "Effects of Atomic Weapons". About the same time, material was prepared which formed the basis for Volume II of "Radiological Defense", published by the Armed Forces Special Weapons Project in 1951. This early work was applicable only to liquid contamination. In 1951 studies of the reclamation of land targets were begun with

aircraft-collected samples during Operation GREENHOUSE. The data obtained are unimportant today, but the effort represented the first real break with the tradition of liquid contamination and also involved the first attempt to simulate a dry fallout for experimental purposes. The underground shot at Operation JANGLE produced a heavy, visible deposit of fallout and permitted a clear distinction between liquid and dry fallout. It became clear that decontamination of dry fallout would reduce radiation levels by at least a factor of 10. These JANGLE experiments are still the only full-scale reclamation studies conducted at a field test, although the Laboratory has since (in 1956 and 1958) carried out large-scale engineering studies of land target reclamation at other locations, particularly at Camp Stoneman. These studies included the development of an effective fallout simulant which affords the opportunity for valid experiments in a continuing program of land target reclamation investigations at nearby locations. The state of knowledge at the time was represented by "Radiological Recovery of Fixed Military Installations", a joint-service manual prepared by NRDL during 1952 and 1953 and issued by the three services in August 1953.

During Operation CASTLE in early 1954, the accidental injury of people a hundred miles from Shot Bravo ground zero gave a new dimension to the fallout problem, and the tremendous area of hazard made a profound impression.

Megaton-yield weapons gave radiological defense a priority status, but tests in the coral atolls of the Pacific produced a typical fallout. This fact led to the development of fallout simulants and to continually-refined theories of decontamination such as "Theory of Decontamination, Part I", which emphasizes removal of material mass rather than radioactivity.

The most recent reclamation information is summarized in the April 1958 revision of "Radiological Recovery of Fixed Military Installations" (Army TM 3-225; Navy Bureau of Yards and Docks TP-PL-13). Little remains of the 1953 version. It is shown that in some instances, dose may be reduced by a factor of 100; recovery planning is reduced to a definitive step-by-step process.

PUBLICATION IN THE OPEN LITERATURE

Hand in hand with the issuing of reports on scientific investigations go the journal articles which are largely responsible for building the reputation of the individual scientist as well as his organization. Laboratory investigators have had approximately 1,000 of these printed in such major scientific journals as Analytical Chemistry, American Journal of Physiology, Blood, Cancer Research, Journal of Applied Physics, Nucleonics, Journal of Colloid Science, Physical Review, Journal of the American